BEAM POWER AMPLIFIER

DESCRIPTION

The GL-5686 is a heater-cathode type miniature beam power amplifier designed for dependable operation under service conditions encountered in mobile and aircraft use. The tube is suitable for Class A audio power-amplifier service or for Class C radio-frequency power-amplifier service up to 160 megacycles. Multiple leads on the cathode and screen grid facilitate radio-frequency by-passing at high frequencies.

TECHNICAL INFORMATION

GENERAL

Electrical Data

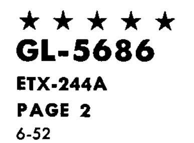
Cathode—indirectly heated

Heater voltage	6.3		volts
Heater current	0.35		ampere
Direct interelectrode capacitances	**With Shield**	**Without Shield**	
Grid No. 1 to plate	0.08 max	0.11 max	uuf
Input	6.5	6.4	uuf
Output	8.5	4.0	uuf





Supersedes ETX-244 dated 5-50



TECHNICAL INFORMATION (CONT'D)

Mechanical Data

Mounting position—any
Envelope—T-6½ glass
Base—Miniature button 9-pin

MAXIMUM RATINGS Design Center Values

CLASS A_1 AMPLIFIER

Parameter	Value	Unit
Plate voltage	250	volts
Grid No. 2 voltage	250	volts
Plate dissipation	7.5	watts
Grid No. 2 dissipation	3.0	watts
Grid No. 1 circuit resistance		
Fixed bias	0.1	megohm
Self bias	0.5	megohm
Peak heater-cathode voltage	±90	volts

TYPICAL OPERATION

CLASS A_1 AMPLIFIER

Parameter	Value	Unit
Plate voltage	250	volts
Grid No. 2 voltage	250	volts
Grid No. 1 voltage	−12.5	volts
Transconductance	3100	micromhos
Plate current (no signal)	27	milliamperes
Grid No. 2 current (no signal)	5.0	milliamperes
Load resistance	9000	ohms
Power output	2.7	watts

MAXIMUM RATINGS Design Center Values

CLASS C RADIO-FREQUENCY AMPLIFIER

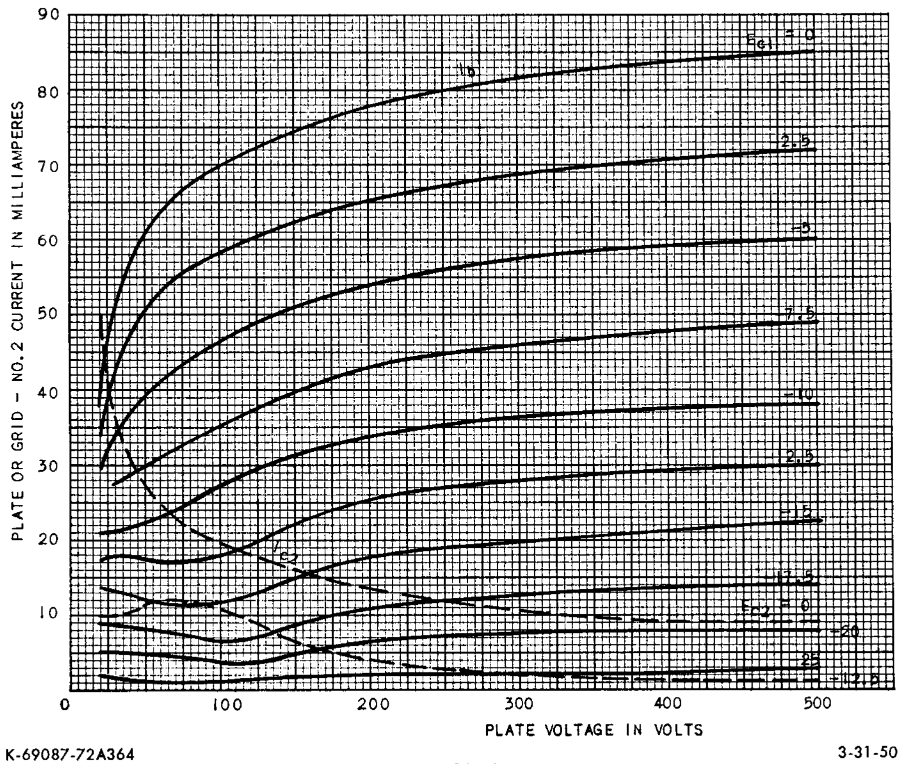
Parameter	Value	Unit
Plate voltage	250	volts
Grid No. 2 voltage	250	volts
Grid No. 1 voltage	−150	volts
Plate Dissipation	7.5	watts
Grid No. 2 dissipation	3.0	watts
Plate input power	10	watts
Plate current	40	milliamperes
Grid No. 2 current	15	milliamperes
Grid No. 1 current	3.0	milliamperes
Peak heater-cathode voltage	±90	volts
Grid No. 1 circuit resistance	50,000	ohms

TYPICAL OPERATION

CLASS C TELEGRAPHY RADIO-FREQUENCY AMPLIFIER UP TO 160 MEGACYCLES

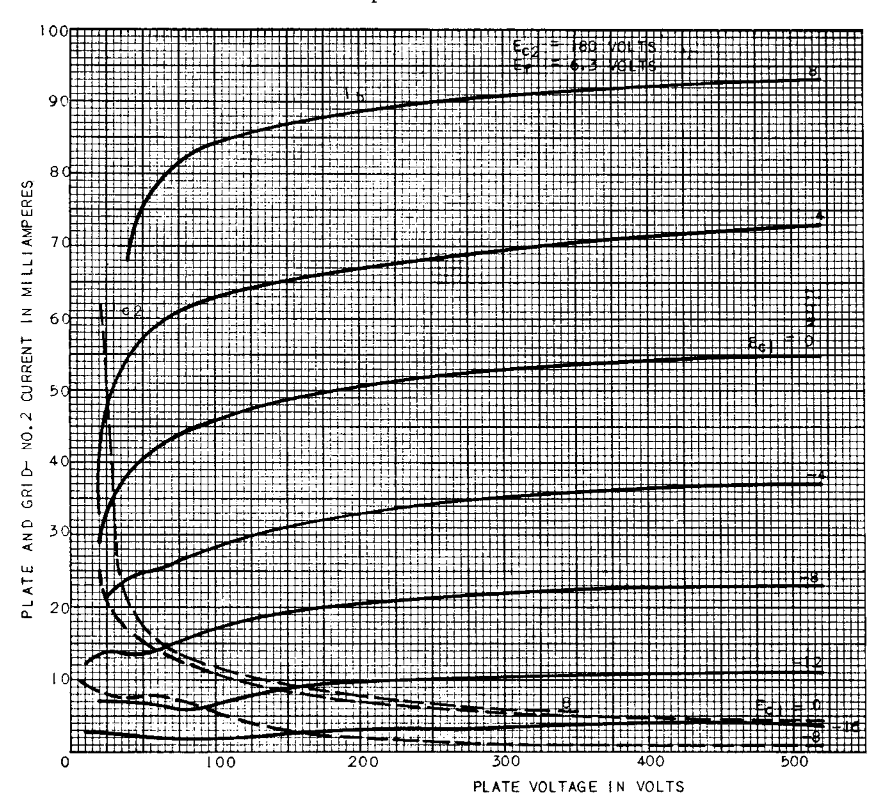
Parameter			Unit
Plate voltage	250	250	volts
Grid No. 2 voltage	180	250	volts
Grid No. 1 voltage	−30	−50	volts
or Grid No. 1 resistor	15,000	25,000	ohms
Peak R-f grid No. 1 voltage	50	75	volts
Plate current	30	40	milliamperes
Grid No. 2 current, approximate	6.5	10.5	milliamperes
Grid No. 1 current, approximate	2.0	2.0	milliamperes
R-f grid driving power, approximate	0.10	0.15	watts
Power output, approximate	5.0	6.5	watts
Useful power output at 125 megacycles		5.25	watts

GL-5686
AVERAGE PLATE CHARACTERISTICS
$E_{c2} = 250$ VOLTS
$E_f = 6.3$ VOLTS



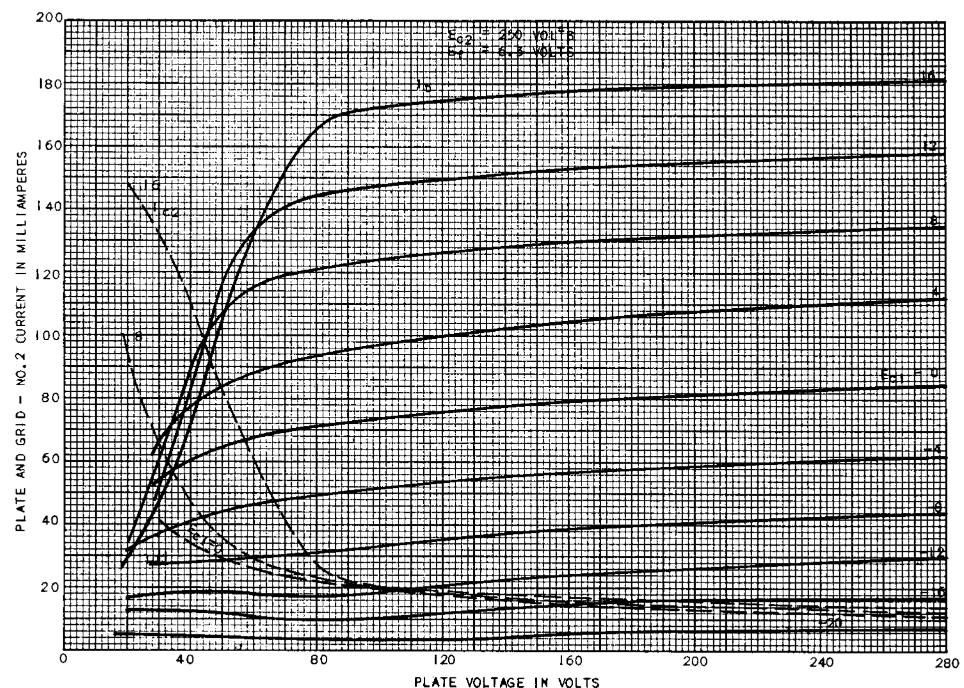
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GL-5686
AVERAGE PLATE CHARACTERISTICS
$E_{c2} = 180$ VOLTS
$E_f = 6.3$ VOLTS



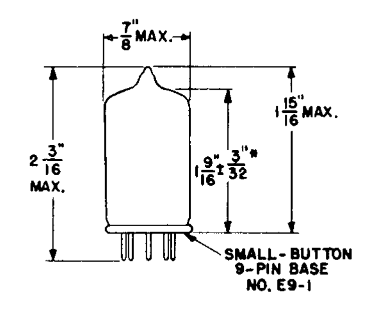
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GL-5686
AVERAGE PLATE CHARACTERISTICS
$E_{c2}=250$ VOLTS $E_f=6.3$ VOLTS



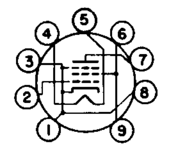
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OUTLINE GL-5686



*MEASURED FROM BASE SEAT TO BULB-TOP LINE AS DETERMINED BY RING GAGE OF 7/16" I.D.

BASING DIAGRAM



PIN 1: CATHODE AND GRID NO. 3
PIN 2: GRID NO. 1
PIN 3: CATHODE AND GRID NO. 3
PIN 4: HEATER
PIN 5: HEATER
PIN 6: GRID NO. 2
PIN 7: PLATE
PIN 8: CATHODE AND GRID NO. 3
PIN 9: GRID NO. 2

N-15172AZ 2-21-50

